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NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	SEP 01	New pricing for the Save Answers for SciFinder Wizard within STN Express with Discover!
NEWS	4	OCT 28	KOREAPAT now available on STN
NEWS	5	NOV 30	PHAR reloaded with additional data
NEWS	6	DEC 01	LISA now available on STN
NEWS	7	DEC 09	12 databases to be removed from STN on December 31, 2004
NEWS	8	DEC 15	MEDLINE update schedule for December 2004
NEWS	9	DEC 17	ELCOM reloaded; updating to resume; current-awareness alerts (SDIs) affected
NEWS	10	DEC 17	COMPUAB reloaded; updating to resume; current-awareness alerts (SDIs) affected
NEWS	11	DEC 17	SOLIDSTATE reloaded; updating to resume; current-awareness alerts (SDIs) affected
NEWS	12	DEC 17	CERAB reloaded; updating to resume; current-awareness alerts (SDIs) affected
NEWS	13	DEC 17	THREE NEW FIELDS ADDED TO IFIPAT/IFIUDB/IFICDB
NEWS	14	DEC 30	EPPFULL: New patent full text database to be available on STN
NEWS	15	DEC 30	CAPLUS - PATENT COVERAGE EXPANDED
NEWS	16	JAN 03	No connect-hour charges in EPPFULL during January and February 2005
NEWS	17	FEB 25	CA/CAPLUS - Russian Agency for Patents and Trademarks (ROSPATENT) added to list of core patent offices covered
NEWS	18	FEB 10	STN Patent Forums to be held in March 2005
NEWS	19	FEB 16	STN User Update to be held in conjunction with the 229th ACS National Meeting on March 13, 2005
NEWS EXPRESS			JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 14:22:49 ON 25 FEB 2005

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 14:23:10 ON 25 FEB 2005  
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STRUCTURE FILE UPDATES: 23 FEB 2005 HIGHEST RN 836595-43-8  
DICTIONARY FILE UPDATES: 23 FEB 2005 HIGHEST RN 836595-43-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> s tagatose/cn  
L1 1 TAGATOSE/CN

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	5.03	5.24

FILE 'CAPLUS' ENTERED AT 14:23:48 ON 25 FEB 2005  
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FILE COVERS 1907 - 25 Feb 2005 VOL 142 ISS 10  
FILE LAST UPDATED: 24 Feb 2005 (20050224/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s L1  
L2 196 L1

=> isomerase AND L2  
ISOMERASE IS NOT A RECOGNIZED COMMAND  
The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter  
"HELP COMMANDS" at an arrow prompt (=>).

=> s isomerase AND L2  
16648 ISOMERASE  
1463 ISOMERASES  
16940 ISOMERASE  
(ISOMERASE OR ISOMERASES)

L3 3 ISOMERASE AND L2

=> d all

L3 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2003:77539 CAPLUS  
DN 138:90013  
ED Entered STN: 31 Jan 2003  
TI Process for manufacturing of tagatose from lactose via enzymic hydrolysis  
and isomerization reactions  
IN Bertelsen, Hans; Eriknauer, Kristian; Bottcher, Karen; Christensen, Hans  
Jorgen Singel; Stougaard, Peter; Hansen, Ole Cai; Jorgensen, Flemming  
PA Den.  
SO U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S. Ser. No. 905,108,  
abandoned.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM A61K031-70  
ICS C12P019-02; C07H001-00  
NCL 514023000; 435105000; 536001110  
CC 33-2 (Carbohydrates)  
Section cross-reference(s): 7, 9  
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003022844	A1	20030130	US 2002-194295	20020715
	US 2003129710	A1	20030710	US 2002-193896	20020715
PRAI	DK 2001-1114	A	20010716		
	US 2001-305155P	P	20010716		
	US 2001-905108	B2	20010716		
	US 2001-386209P	P	20010716		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003022844	ICM	A61K031-70
	ICS	C12P019-02; C07H001-00
	NCL	514023000; 435105000; 536001110
US 2003022844	ECLA	C12N009/24; C12N009/90; C12P019/02
US 2003129710	ECLA	C12N009/24; C12N009/90; C12P019/02

OS CASREACT 138:90013

AB Tagatose is manufactured by hydrolyzing lactose to galactose and glucose and  
isomerizing galactose to tagatose and chromatog. separation and recycling any  
unconverted compds. Thereby high yields of pure tagatose are obtained.

ST tagatose prepn lactose enzymic hydrolysis isomerization

IT Hydrolysis

(biol.; process for manufacturing of tagatose from lactose via enzymic  
hydrolysis and isomerization reactions)

IT Isomerization

(process for manufacturing of tagatose from lactose via enzymic hydrolysis  
and isomerization reactions)

IT 9031-11-2, Lactase

RL: CAT (Catalyst use); USES (Uses)  
 (S. solfataricus; process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 9023-80-7, L-Arabinose **isomerase**  
 RL: CAT (Catalyst use); USES (Uses)  
 (Thermoanaerobacter mathranii; process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 50-99-7P, D-Glucose, preparation **17598-81-1P**, Tagatose  
 RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation)  
 (process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 59-23-4P, D-Galactose, preparation  
 RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)  
 (process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 439253-48-2, Galactose **isomerase**  
 RL: CAT (Catalyst use); USES (Uses)  
 (process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 63-42-3, Lactose  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

=> d

L3 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2003:77539 CAPLUS  
 DN 138:90013  
 TI Process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions  
 IN Bertelsen, Hans; Eriknauer, Kristian; Bottcher, Karen; Christensen, Hans Jorgen Singel; Stougaard, Peter; Hansen, Ole Cai; Jorgensen, Flemming  
 PA Den.  
 SO U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S. Ser. No. 905,108, abandoned.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003022844	A1	20030130	US 2002-194295	20020715
	US 2003129710	A1	20030710	US 2002-193896	20020715
PRAI	DK 2001-1114	A	20010716		
	US 2001-305155P	P	20010716		
	US 2001-905108	B2	20010716		
	US 2001-386209P	P	20010716		
OS	CASREACT 138:90013				

=> d 2,3 L3

L3 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2002:126213 CAPLUS  
 DN 136:182869  
 TI Separation of tagatose from sugar syrup by ion exchange resins  
 IN Umino, Takehiro; Watanabe, Sumihide; Yamamoto, Mikio  
 PA Nihon Shokuhin Kako Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002051800	A2	20020219	JP 2000-240019	20000808
PRAI	JP 2000-240019		20000808		

L3 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:925357 CAPLUS

DN 136:182502

TI Development of an immobilization method of L-arabinose isomerase for industrial production of tagatose

AU Oh, Deok-Kun; Kim, Hye-Jung; Ryu, Se-Ah; Rho, Hoe-Jin; Kim, Pil

CS Department of Bioscience and Biotechnology, Sejong University, Seoul, 143-747, S. Korea

SO Biotechnology Letters (2001), 23(22), 1859-1862

CODEN: BILED3; ISSN: 0141-5492

PB Kluwer Academic Publishers

DT Journal

LA English

OS CASREACT 136:182502

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	11.76	17.00
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-0.73	-0.73

FILE 'REGISTRY' ENTERED AT 14:28:37 ON 25 FEB 2005

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STRUCTURE FILE UPDATES: 23 FEB 2005 HIGHEST RN 836595-43-8

DICTIONARY FILE UPDATES: 23 FEB 2005 HIGHEST RN 836595-43-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

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Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> S 9023-80-7/RN

L4 1 9023-80-7/RN

=> SET NOTICE 1 DISPLAY

NOTICE SET TO 1 U.S. DOLLAR FOR DISPLAY COMMAND  
SET COMMAND COMPLETED

=> D L4 SQIDE 1-

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y  
THE ESTIMATED COST FOR THIS REQUEST IS 6.15 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:y

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 9023-80-7 REGISTRY  
CN Isomerase, L-arabinose (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN E.C. 5.3.1.4  
CN L-Arabinose isomerase  
MF Unspecified  
CI MAN  
LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CIN,  
TOXCENTER, USPATFULL  
DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report  
RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PREP  
(Preparation); PROC (Process); PRP (Properties); USES (Uses)  
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological  
study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU  
(Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES  
(Uses); NORL (No role in record)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
105 REFERENCES IN FILE CA (1907 TO DATE)  
105 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> SET NOTICE LOGIN DISPLAY

NOTICE SET TO OFF FOR DISPLAY COMMAND  
SET COMMAND COMPLETED

=>

=> file caplus,agricola,biobusiness,biosis,ca,casreact,cin,toxcenter,uspatfull  
COST IN U.S. DOLLARS

	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	5.28	22.28

	SINCE FILE	TOTAL
	ENTRY	SESSION
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)		
CA SUBSCRIBER PRICE	0.00	-0.73

FILE 'CAPLUS' ENTERED AT 14:33:33 ON 25 FEB 2005  
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FILE 'USPATFULL' ENTERED AT 14:33:33 ON 25 FEB 2005  
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> s L4  
L5            317 L4

=> rem dup  
DUP IS NOT VALID HERE  
The DELETE command is used to remove various items stored by the  
system.

To delete a saved query, saved answer set, saved L-number list, SDI  
request, batch request, mailing list, or user-defined cluster, format,  
or search field, enter the name. The name may include ? for left,  
right, or simultaneous left and right truncation.

Examples:

DELETE BIO?/Q	- delete query names starting with BIO
DELETE ?DRUG/A	- delete answer set names ending with DRUG
DELETE ?ELEC?/L	- delete L-number lists containing ELEC
DELETE ANTICOAG/S	- delete SDI request
DELETE ENZYME/B	- delete batch request
DELETE .MYCLUSTER	- delete user-defined cluster
DELETE .MYFORMAT	- delete user-defined display format
DELETE .MYFIELD	- delete user-defined search field
DELETE NAMELIST MYLIST	- delete mailing list

To delete an ordered document or an offline print, enter its  
number.

Examples:

DELETE P123001C	- delete print request
DELETE D134002C	- delete document order request

To delete an individual L-number or range of L-numbers, enter the  
L-number or L-number range. You may also enter DELETE LAST followed  
by a number, n, to delete the last n L-numbers. RENUMBER or  
NORENUMBER may also be explicitly specified to override the value of  
SET RENUMBER.

Examples:

DELETE L21	- delete a single L-number
DELETE L3-L6	- delete a range of L-numbers
DELETE LAST 4	- delete the last 4 L-numbers
DELETE L33-	- delete L33 and any higher L-number

DELETE -L55 - delete L55 and any lower L-number  
 DELETE L2-L6 RENUMBER - delete a range of L-numbers and  
                                 renumber remaining L-numbers  
 DELETE RENUMBER - renumber L-numbers after deletion of  
                                 intermediate L-numbers

Entire sets of saved items, SDI requests, batch requests, user-defined items, or E-numbers can be deleted.

Examples:

DELETE SAVED/Q - delete all saved queries  
 DELETE SAVED/A - delete all saved answer sets  
 DELETE SAVED/L - delete all saved L-number lists  
 DELETE SAVED - delete all saved queries, answer sets,  
                                 and L-number lists  
 DELETE SAVED/S - delete all SDI requests  
 DELETE SAVED/B - delete all batch requests  
 DELETE CLUSTER - delete all user-defined clusters  
 DELETE FORMAT - delete all user-defined display formats  
 DELETE FIELD - delete all user-defined search fields  
 DELETE SELECT - delete all E-numbers  
 DELETE HISTORY - delete all L-numbers and restart the  
                                 session at L1

To delete an entire multifile SDI request, enter DELETE and the name of the request. To delete a component from the multifile SDI, enter DELETE and the name of the component.

=> s L4

L6 317 L4

=> duplicate remove

ENTER L# LIST OR (END):L6

DUPLICATE PREFERENCE IS 'CAPLUS, AGRICOLA, BIOBUSINESS, BIOSIS, CA, CASREACT, CIN, TOXCENTER, USPATFULL'

KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L6

L7 137 DUPLICATE REMOVE L6 (180 DUPLICATES REMOVED)

=> d 1-10 ti,so,abs,ibi L7

'IBI' IS NOT A VALID FORMAT

In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.

REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ti,so,abs

L7 ANSWER 1 OF 137 USPATFULL on STN

TI Thermostable L-arabinose isomerase and process for preparing D-tagatose

AB Disclosed are a novel gene coding for L-arabinose isomerase derived from *Thermotoga neapolitana* 5068, a thermostable arabinose isomerase expressed from the said gene, a recombinant expression vector containing the said gene, a microorganism transformed with the said expression vector, a process for preparing thermostable arabinose isomerase from the said transformant and a process for preparing D-tagatose employing the said enzyme. Since the recombinant arabinose isomerase is highly thermostable and can produce tagatose with high yield at high temperature, it can be efficiently applied in pharmaceutical and food industries.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 2 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1



TI Characterization of a thermostable L-arabinose (D-galactose) isomerase from the hyperthermophilic eubacterium *Thermotoga maritima*

SO Applied and Environmental Microbiology (2004), 70(3), 1397-1404  
CODEN: AEMIDF; ISSN: 0099-2240

AB The araA gene encoding L-arabinose isomerase (AI) from the hyperthermophilic bacterium *Thermotoga maritima* was cloned and overexpressed in *Escherichia coli* as a fusion protein containing a C-terminal hexahistidine sequence. This gene encodes a 497-amino-acid protein with a calculated mol. weight of 56,658. The recombinant enzyme was purified to homogeneity by heat precipitation followed by Ni<sup>2+</sup> affinity chromatog. The native

enzyme was estimated by gel filtration chromatog. to be a homotetramer with a mol. mass of 232 kDa. The purified recombinant enzyme had an isoelec. point of 5.7 and exhibited maximal activity at 90° and pH 7.5 under the assay conditions used. Its apparent K<sub>m</sub> values for L-arabinose and D-galactose were 31 and 60 mM, resp.; the apparent V<sub>max</sub> values (at 90°) were 41.3 U/mg (L-arabinose) and 8.9 U/mg (D-galactose), and the catalytic efficiencies (k<sub>cat</sub>/K<sub>m</sub>) of the enzyme were 74.8 mM<sup>-1</sup> · min<sup>-1</sup> (L-arabinose) and 8.5 mM<sup>-1</sup> · min<sup>-1</sup> (D-galactose). Although the *T. maritima* AI exhibited high levels of amino acid sequence similarity (>70%) to other heat-labile mesophilic AIs, it had greater thermostability and higher catalytic efficiency than its mesophilic counterparts at elevated temps. In addition, it was more thermostable in the presence of Mn<sup>2+</sup> and/or Co<sup>2+</sup> than in the absence of these ions. The enzyme carried out the isomerization of D-galactose to D-tagatose with a conversion yield of 56% for 6 h at 80°.

L7 ANSWER 3 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2

TI Enzymatic conversion of D-galactose to D-tagatose: heterologous expression and characterisation of a thermostable L-arabinose isomerase from *Thermoanaerobacter mathranii*

SO Applied Microbiology and Biotechnology (2004), 64(6), 816-822  
CODEN: AMBIDG; ISSN: 0175-7598

AB The ability to convert D-galactose into D-tagatose was compared among a number of bacterial L-arabinose isomerases (araA). One of the most efficient enzymes, from the anaerobic thermophilic bacterium *Thermoanaerobacter mathranii*, was produced heterologously in *Escherichia coli* and characterized. Amino acid sequence comparisons indicated that this enzyme is only distantly related to the group of previously known araA sequences in which the sequence similarity is evident. The substrate specificity and the Michaelis-Menten consts. of the enzyme determined with L-arabinose, D-galactose and D-fucose also indicated that this enzyme is an unusual, versatile L-arabinose isomerase which is able to isomerize structurally related sugars. The enzyme was immobilized and used for production of D-tagatose at 65 °C. Starting from a 30% solution of D-galactose, the yield of D-tagatose was 42% and no sugars other than D-tagatose and D-galactose were detected. Direct conversion of lactose to D-tagatose in a single reactor was demonstrated using a thermostable β-galactosidase together with the thermostable L-arabinose isomerase. The two enzymes were also successfully combined with a com. available glucose isomerase for conversion of lactose into a sweetening mixture comprising lactose, glucose, galactose, fructose and tagatose.

L7 ANSWER 4 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3

TI A new thermophile strain of *Geobacillus thermodenitrificans* having L-arabinose isomerase activity for tagatose production

SO Journal of Microbiology and Biotechnology (2004), 14(2), 312-316  
CODEN: JOMBES; ISSN: 1017-7825

AB Five strains, producing bacterial thermostable L-arabinose isomerase, were isolated from Korean soil samples obtained from compost under high temperature circumstances. Among these strains, the CBG-A1 showed the highest L-arabinose isomerase activity at 60°C and was selected as a D-tagatose producing strain from D-galactose. This strain was identified as *Geobacillus thermodenitrificans* based on the 16S rRNA anal., and biol.

and biochem. characteristics. The isolated strain was aerobic, rod-shaped, Gram-pos., nonmotile, and an endospore-forming bacterium. No growth was detected in culture temperature below 40°C. The maximum growth temperature and maximum temperature of enzyme activity were 75°C and 65°C, resp. In metal ion effects, Ca<sup>2+</sup> was the most effective enzyme activator with the reaction rate by 150%. In a 5-l jar fermentor with 3-l MY medium, L-arabinose isomerase activity was growth-associated and pH decreased rapidly after the initial logarithmic phase.

- L7 ANSWER 5 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 4  
TI Current studies on biological tagatose production using L-arabinose isomerase: a review and future perspective  
SO Applied Microbiology and Biotechnology (2004), 65(3), 243-249  
CODEN: AMBIDG; ISSN: 0175-7598  
AB A review, with refs. D-Tagatose is a hexoketose monosaccharide sweetener, which is an isomer of D-galactose and is rarely found in nature. Recently, there has been industrial interest in D-tagatose as a low-calorie sugar-substituting sweetener. This article describes the properties and metabolism of tagatose as well as its com. importance. The comparison between the biol. tagatose production and the chemical production was reviewed based on the example of the glucose isomerization into fructose. The industrial problems facing its com. application is described and evolving potential solns. are suggested.
- L7 ANSWER 6 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5  
TI Modified Saccharomyces cerevisiae strain that consumes L-arabinose and produces ethanol  
SO PCT Int. Appl., 11 pp.  
CODEN: PIXXD2  
AB The present invention relates to a method for producing a L-arabinose utilizing yeast stain for the production ethanol. The yeast strain is modified by introducing and expressing araA gene (L-arabinose isomerase), araB gene (L-ribulokinase D121-N) and araD gene (L-ribulose-5-P 4-epimerase) and carrying addnl. mutations in its genome or overexpressing a TAL1 (transaldolase) gene. The modified Saccharomyces strain is able to consume L-arabinose and to produce ethanol for use as a suitable alternative to fossil fuels.
- L7 ANSWER 7 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6  
TI Process for manufacturing of tagatose  
SO PCT Int. Appl., 22 pp.  
CODEN: PIXXD2  
AB Tagatose is manufactured by hydrolyzing lactose to galactose and glucose and isomerizing galactose to tagatose and chromatog. separation and recycling any unconverted compds. Thereby high yields of pure tagatose are obtained.
- L7 ANSWER 8 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 7  
TI Sequences of thermostable L-arabinose isomerase from Thermoanaerobacter mathranii and their use for producing tagatose  
SO PCT Int. Appl., 62 pp.  
CODEN: PIXXD2  
AB The invention provides sequences of a novel thermostable L-arabinose isomerase derived from Thermoanaerobacter mathranii. The enzyme is suitable for the production of D-tagatose, a useful low-calories sweetener. The enzyme may be obtained from a Thermoanaerobacter species.
- L7 ANSWER 9 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 8  
TI Process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions  
SO U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S. Ser. No. 905,108, abandoned.  
CODEN: USXXCO  
AB Tagatose is manufactured by hydrolyzing lactose to galactose and glucose and

isomerizing galactose to tagatose and chromatog. separation and recycling any unconverted compds. Thereby high yields of pure tagatose are obtained.

L7 ANSWER 10 OF 137 USPATFULL on STN

TI Biological tagatose production by recombinant Escherichia coli

AB This invention relates to a recombinant Escherichia coli and a process for producing D-tagatose. In detail, it includes the construction of recombinant E.coli harboring L-arabinose isomerase, whole-cell conversion of D-galactose into D-tagatose by recombinant E.coli expressing L-arabinose isomerase, enzymatic production of D-tagatose by the extract of recombinant E.coli expressing L-arabinose isomerase, and bioconversion by immobilized L-arabinose isomerase.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d 11-20 Ti, so, abs, ibib L7

L7 ANSWER 11 OF 137 USPATFULL on STN

TI Methods for identifying therapeutic targets for treating infectious disease

AB This invention provides methods and systems to identify enzymes that act as enzyme catalyzed therapeutic activators and the enzymes identified by these methods. Also provided by this invention are compounds activated by the enzymes as well as compositions containing these compounds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:188386 USPATFULL

TITLE: Methods for identifying therapeutic targets for treating infectious disease

INVENTOR(S): Shepard, H. Michael, Encinitas, CA, UNITED STATES  
Lackey, David B., San Diego, CA, UNITED STATES  
Cathers, Brian E., San Diego, CA, UNITED STATES  
Sergeeva, Maria V., San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003130179	A1	20030710
APPLICATION INFO.:	US 2001-910345	A1	20010720 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-219598P	20000720 (60)
	US 2000-244953P	20001101 (60)
	US 2001-276728P	20010316 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: Antoinette F. Konski, McCutchen, Doyle, Brown & Enersen, LLP, 18th Floor, Three Embarcadero Center, San Francisco, CA, 94111

NUMBER OF CLAIMS: 81

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 342 Drawing Page(s)

LINE COUNT: 4432

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 12 OF 137 USPATFULL on STN

TI Novel thermostable isomerase and use hereof, in particular for producing tagatose

AB A novel L-arabinose isomerase active enzyme and its corresponding gene, derived from a thermophilic source are provided. The enzyme is suitable for the production of D-tagatose, a useful low-calorie sweetener. The enzyme may be obtained from a Thermoanaerobacter species such as Thermoanaerobacter mathranii.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:187920 USPATFULL

TITLE: Novel thermostable isomerase and use hereof, in particular for producing tagatose

INVENTOR(S): Hansen, Ole C., Vaerloose, DENMARK  
Jorgensen, Flemming, Lyngby, DENMARK  
Stougaard, Peter, Skibby, DENMARK  
Bertelsen, Hans, Videbaek, DENMARK  
Bottcher, Karen, Kibaek, DENMARK  
Christensen, Hans Jorgen Singel, Herning, DENMARK  
Eriknauer, Kristian, Odder, DENMARK

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003129710	A1	20030710
APPLICATION INFO.:	US 2002-193896	A1	20020715 (10)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 2001-386209, filed on 16 Jul 2001, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-305155P	20010716 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Finnegan, Henderson, Farabow,, Garrett & Dunner, L.L.P., 1300 I Street, N.W., Washington, DC, 20005-3315	
NUMBER OF CLAIMS:	35	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	8 Drawing Page(s)	
LINE COUNT:	2155	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 13 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 9

TI A modified *Saccharomyces cerevisiae* strain that consumes L-arabinose and produces ethanol

SO Applied and Environmental Microbiology (2003), 69(7), 4144-4150  
CODEN: AEMIDF; ISSN: 0099-2240

AB Metabolic engineering is a powerful method to improve, redirect, or generate new metabolic reactions or whole pathways in microorganisms. Here we describe the engineering of a *Saccharomyces cerevisiae* strain able to utilize the pentose sugar L-arabinose for growth and to ferment it to ethanol. Expanding the substrate fermentation range of *S. cerevisiae* to include

pentoses is important for the utilization of this yeast in economically feasible biomass-to-ethanol fermentation processes. After overexpression of a bacterial L-arabinose utilization pathway consisting of *Bacillus subtilis* AraA and *Escherichia coli* AraB and AraD and simultaneous overexpression of the L-arabinose-transporting yeast galactose permease, we were able to select an L-arabinose-utilizing yeast strain by sequential transfer in L-arabinose media. Mol. anal. of this strain, including DNA microarrays, revealed that the crucial prerequisite for efficient utilization of L-arabinose is a lowered activity of L-ribulokinase. Moreover, high L-arabinose uptake rates and enhanced transaldolase activities favor utilization of L-arabinose. With a doubling time of about 7.9 h in a medium with L-arabinose as the sole carbon source, an ethanol production rate of 0.06 to 0.08 g of ethanol per g (dry weight) · h<sup>-1</sup> under oxygen-limiting conditions, and high ethanol yields, this yeast strain should be useful for efficient fermentation of hexoses and pentoses in cellulosic biomass hydrolyzates.

ACCESSION NUMBER: 2003:552388 CAPLUS

DOCUMENT NUMBER: 139:244787

TITLE: A modified *Saccharomyces cerevisiae* strain that consumes L-arabinose and produces ethanol

AUTHOR(S): Becker, Jessica; Boles, Eckhard  
 CORPORATE SOURCE: Institut fuer Mikrobiologie, Heinrich-Heine-  
 Universitaet, Duesseldorf, D-40225, Germany  
 SOURCE: Applied and Environmental Microbiology (2003), 69(7),  
 4144-4150  
 CODEN: AEMIDF; ISSN: 0099-2240  
 PUBLISHER: American Society for Microbiology  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 10  
 TI Continuous D-Tagatose Production by Immobilized Thermostable L-Arabinose  
 Isomerase in a Packed-Bed Bioreactor  
 SO Biotechnology Progress (2003), 19(6), 1643-1647  
 CODEN: BIPRET; ISSN: 8756-7938  
 AB D-Tagatose was continuously produced using thermostable L-arabinose  
 isomerase immobilized in alginate with D-galactose solution in a packed-bed  
 bioreactor. Bead size, L/D (length/diameter) of reactor, dilution rate, total  
 loaded enzyme amount, and substrate concentration were found to be optimal at  
 0.8 mm, 520/7 mm, 0.375 h<sup>-1</sup>, 5.65 units, and 300 g/L, resp. Under these  
 conditions, the bioreactor produced about 145 g/L tagatose with an average  
 productivity of 54 g tagatose/L·h and an average conversion yield of  
 48% (weight/weight). Operational stability of the immobilized enzyme was  
 demonstrated, with a tagatose production half-life of 24 days.

ACCESSION NUMBER: 2003:519828 CAPLUS  
 DOCUMENT NUMBER: 139:349682  
 TITLE: Continuous D-Tagatose Production by Immobilized  
 Thermostable L-Arabinose Isomerase in a Packed-Bed  
 Bioreactor  
 AUTHOR(S): Ryu, Se-Ah; Kim, Chang Sup; Kim, Hye-Jung; Baek, Dae  
 Heoun; Oh, Deok-Kun  
 CORPORATE SOURCE: Department of Bioscience and Biotechnology, Sejong  
 University, Seoul, 143-747, S. Korea  
 SOURCE: Biotechnology Progress (2003), 19(6), 1643-1647  
 CODEN: BIPRET; ISSN: 8756-7938  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 139:349682  
 REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 11  
 TI Production of tagatose by a recombinant thermostable L-arabinose isomerase  
 from Thermus sp. IM6501  
 SO Biotechnology Letters (2003), 25(12), 963-967  
 CODEN: BILED3; ISSN: 0141-5492  
 AB A gene (thaI) corresponding to L-arabinose isomerase from Thermus strain  
 IM6501 was cloned by PCR. It comprised 1488 nucleotides and encoded a  
 polypeptide of 496 residues with a predicted mol. weight of 56019 Da. The  
 deduced amino acid sequence had 96.8% identity with the L-arabinose  
 isomerase of Geobacillus stearothermophilus. Recombinant ThaI with  
 N-terminal hexa-histidine tags was over-expressed in Escherichia coli and  
 purified by affinity chromatog. using Ni-NTA resin. The purified ThaI was  
 thermostable with maximal activity at 60 °C at pH 8 for 30 min of  
 reaction. Zn<sup>2+</sup> and Ni<sup>2+</sup> inactivated the catalytic activity of ThaI, 5 mM  
 Mn<sup>2+</sup> enhanced the bioconversion yield by 90%. The bioconversion yield of  
 54% from D-galactose to D-tagatose was obtained by recombinant ThaI at 60  
 °C over 3 d.  
 ACCESSION NUMBER: 2003:432388 CAPLUS  
 DOCUMENT NUMBER: 140:58480

TITLE: Production of tagatose by a recombinant thermostable L-arabinose isomerase from *Thermus* sp. IM6501  
 AUTHOR(S): Kim, Jung-Woo; Kim, Young-Wan; Roh, Hoe-Jin; Kim, Hae-Young; Cha, Jae-Ho; Park, Kwan-Hwa; Park, Cheon-Seok  
 CORPORATE SOURCE: Department of Food Science and Technology, Kyunghee Univ., Youngin, 449-701, S. Korea  
 SOURCE: Biotechnology Letters (2003), 25(12), 963-967  
 CODEN: BILED3; ISSN: 0141-5492  
 PUBLISHER: Kluwer Academic Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 16 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 12  
 TI A feasible enzymatic process for D-tagatose production by an immobilized thermostable L-arabinose isomerase in a packed-bed bioreactor  
 SO Biotechnology Progress (2003), 19(2), 400-404  
 CODEN: BIPRET; ISSN: 8756-7938  
 AB To develop a feasible enzymic process for D-tagatose production, a thermostable L-arabinose isomerase, Gal152, was immobilized in alginate, and the galactose isomerization reaction conditions were optimized. The pH and temperature for the maximum galactose isomerization reaction were pH 8.0 and 65° in the immobilized enzyme system and pH 7.5 and 60° in the free enzyme system. The presence of Mn<sup>2+</sup> enhanced galactose isomerization to tagatose in both the free and immobilized enzyme systems. The immobilized enzyme was more stable than the free enzyme at the same pH and temperature. Under stable conditions of pH 8.0 and 60°, the immobilized enzyme produced 58 g/L of tagatose from 100 g/L galactose in 90 h by batch reaction, whereas the free enzyme produced 37 g/L tagatose due to its lower stability. A packed-bed bioreactor with immobilized Gal152 in alginate beads produced 50 g/L tagatose from 100 g/L galactose in 168 h, with a productivity of 13.3 (g of tagatose)/(L-reactor·h) in continuous mode. The bioreactor produced 230 g/L tagatose from 500 g/L galactose in continuous recycling mode, with a productivity of 9.6 g/L-h and a conversion yield of 46%.

ACCESSION NUMBER: 2002:982441 CAPLUS  
 DOCUMENT NUMBER: 138:203747  
 TITLE: A feasible enzymatic process for D-tagatose production by an immobilized thermostable L-arabinose isomerase in a packed-bed bioreactor  
 AUTHOR(S): Kim, Hye-Jung; Ryu, Se-Ah; Kim, Pil; Oh, Deok-Kun  
 CORPORATE SOURCE: Department of Bioscience and Biotechnology, Sejong University, Seoul, 143-747, S. Korea  
 SOURCE: Biotechnology Progress (2003), 19(2), 400-404  
 CODEN: BIPRET; ISSN: 8756-7938  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:203747  
 REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 13  
 TI Properties of L-arabinose isomerase from *Escherichia coli* as biocatalyst for tagatose production  
 SO World Journal of Microbiology & Biotechnology (2003), 19(1), 47-51  
 CODEN: WJMBEY; ISSN: 0959-3993  
 AB L-Arabinose isomerase (EC 5.3.1.4) (I) mediates the isomerization of D-galactose into D-tagatose as well as the conversion of L-arabinose into L-ribulose. To investigate the properties of I as a biocatalyst for the conversion of galactose to tagatose, the enzyme from *E. coli* was

characterized. The substrate specificity of I for L-arabinose was 166-fold higher than that for D-galactose. The optimal pH and temperature for the galactose isomerization reaction were 8.0 and 30°, resp. I was stable for 1 h at temps. of <35° and within a pH range of 8-10. The Km for galactose was 1480 mM, which was 25-fold higher than that for arabinose. The addition of Fe2+ and Mn2+ enhanced the conversion of galactose to tagatose, whereas the addition of Cu2+, Zn2+, Hg2+, and Fe3+ ions inhibited the reaction completely. In the presence of 1 mM Fe2+, the Km for galactose was found to be 300 mM.

ACCESSION NUMBER: 2003:156788 CAPLUS  
DOCUMENT NUMBER: 138:397960  
TITLE: Properties of L-arabinose isomerase from Escherichia coli as biocatalyst for tagatose production  
AUTHOR(S): Yoon, Sang-Hyun; Kim, Pil; Oh, Deok-Kun  
CORPORATE SOURCE: R&D Center, Tongyang Confectionery Co., Seoul, 140-715, S. Korea  
SOURCE: World Journal of Microbiology & Biotechnology (2003), 19(1), 47-51  
CODEN: WJMBEY; ISSN: 0959-3993  
PUBLISHER: Kluwer Academic Publishers  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 138:397960  
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 18 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 14  
TI Cloning and characterization of thermostable L-arabinose isomerase from Thermotoga neapolitana and its use for preparing D-tagatose  
SO PCT Int. Appl., 25 pp.  
CODEN: PIXXD2  
AB The present invention relates to a novel gene coding for L-arabinose isomerase derived from Thermotoga neapolitana 5068, a thermostable arabinose isomerase expressed from the said gene, a recombinant expression vector containing the said gene, a microorganism transformed with the said expression vector, a process for preparing thermostable arabinose isomerase from the said transformant and a process for preparing D-tagatose employing the said enzyme. Since the recombinant arabinose isomerase of the invention is highly thermostable and can produce tagatose with high yield at high temperature, it can be efficiently applied in pharmaceutical and food industries.

ACCESSION NUMBER: 2002:504941 CAPLUS  
DOCUMENT NUMBER: 137:59513  
TITLE: Cloning and characterization of thermostable L-arabinose isomerase from Thermotoga neapolitana and its use for preparing D-tagatose  
INVENTOR(S): Pyun, Yu Ryang; Kim, Byoung Chan; Lee, Han Seung; Lee, Dong Woo; Lee, Yoon Hee  
PATENT ASSIGNEE(S): S. Korea  
SOURCE: PCT Int. Appl., 25 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002052021	A1	20020704	WO 2001-KR2243	20011222
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,			

UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 KR 2002051835 A 20020629 KR 2001-80711 20011218  
 US 2004058419 A1 20040325 US 2003-600689 20030620  
 PRIORITY APPLN. INFO.: KR 2000-80711 A 20001218  
 KR 2000-80608 A 20001222  
 WO 2001-KR2243 A1 20011222  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 19 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 15  
 TI Methods for identifying therapeutic targets for treating infectious  
 disease  
 SO PCT Int. Appl., 503 pp.  
 CODEN: PIXXD2  
 AB This invention provides methods and systems to identify enzymes that act  
 as enzyme-catalyzed therapeutic activators and the enzymes identified by  
 these methods. Also provided by this invention are compds. activated by  
 the enzymes as well as compns. containing these compds.  
 ACCESSION NUMBER: 2002:89878 CAPLUS  
 DOCUMENT NUMBER: 136:156403  
 TITLE: Methods for identifying therapeutic targets for  
 treating infectious disease  
 INVENTOR(S): Shepard, Michael H.; Lackey, David B.; Cathers, Brian  
 E.; Sergeeva, Maria V.  
 PATENT ASSIGNEE(S): Newbiotics, Inc., USA  
 SOURCE: PCT Int. Appl., 503 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002007780	A2	20020131	WO 2001-US23095	20010720
WO 2002007780	A3	20030220		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG US 2003130179 A1 20030710 US 2001-910345 20010720 PRIORITY APPLN. INFO.: US 2000-219598P P 20000720 US 2000-244953P P 20001101 US 2001-276728P P 20010316				

L7 ANSWER 20 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 16  
 TI Separation of tagatose from sugar syrup by ion exchange resins  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 AB Tagatose (I), useful as a low-calorie sweetener, is separated by fractionating  
 I-containing sugar syrup by chromatog. using ion exchange resins. Galactose  
 solution was treated with Ca(OH)<sub>2</sub> for 5 h and the reaction mixture was  
 centrifuged. The supernatant was filtered through 0.45-μm membrane  
 filter, desalted using Amberlite MB 3, and concentrated to give syrup  
 containing  
 16.8% galactose and 83.2% I. The syrup was passed through a column packed



with Ca-form Dowex XFS 43278 at 50° and the column was eluted with H2O to give a fraction containing 94.5% I.

ACCESSION NUMBER: 2002:126213 CAPLUS  
DOCUMENT NUMBER: 136:182869  
TITLE: Separation of tagatose from sugar syrup by ion exchange resins  
INVENTOR(S): Umino, Takehiro; Watanabe, Sumihide; Yamamoto, Mikio  
PATENT ASSIGNEE(S): Nihon Shokuhin Kako Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002051800	A2	20020219	JP 2000-240019	20000808
PRIORITY APPLN. INFO.:			JP 2000-240019	20000808

=> s 21-30 ti,so,abs,ibib L7

MISSING OPERATOR ,ABS,IBIB L7

The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> d 21-30 ti, so, abs, ibib L7

L7 ANSWER 21 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 17  
TI Cloning, expression and characterization of L-arabinose isomerase from *Thermotoga neapolitana*: bioconversion of D-galactose to D-tagatose using the enzyme  
SO FEMS Microbiology Letters (2002), 212(1), 121-126  
CODEN: FMLED7; ISSN: 0378-1097  
AB Gene araA encoding an L-arabinose isomerase (AraA) from the hyperthermophile, *Thermotoga neapolitana* 5068 was cloned, sequenced, and expressed in *Escherichia coli*. The gene encoded a polypeptide of 496 residues with a calculated mol. mass of 56 677 Da. The deduced amino acid sequence has 94.8% identical amino acids compared with the residues in a putative L-arabinose isomerase of *Thermotoga maritima*. The recombinant enzyme expressed in *E. coli* was purified to homogeneity by heat treatment, ion exchange chromatog. and gel filtration. The thermophilic enzyme had a maximum activity of L-arabinose isomerization and D-galactose isomerization at 85°, and required divalent cations such as Co<sup>2+</sup> and Mn<sup>2+</sup> for its activity and thermostability. The apparent Km values of the enzyme for L-arabinose and D-galactose were 116 mM (vmax, 119 µmol min<sup>-1</sup> mg<sup>-1</sup>) and 250 mM (vmax, 14.3 µmol min<sup>-1</sup> mg<sup>-1</sup>), resp., that were determined in the presence of both 1 mM Co<sup>2+</sup> and 1 mM Mn<sup>2+</sup>. A 68% conversion of D-galactose to D-tagatose was obtained using the recombinant enzyme at the isomerization temperature of 80°.

ACCESSION NUMBER: 2002:459008 CAPLUS  
DOCUMENT NUMBER: 137:274856  
TITLE: Cloning, expression and characterization of L-arabinose isomerase from *Thermotoga neapolitana*: bioconversion of D-galactose to D-tagatose using the enzyme  
AUTHOR(S): Kim, Byoung-Chan; Lee, Yoon-Hee; Lee, Han-Seung; Lee, Dong-Woo; Choe, Eun-Ah; Pyun, Yu-Ryang  
CORPORATE SOURCE: Department of Biotechnology and Bioproducts Research Center, Yonsei University, Seoul, 120-749, S. Korea  
SOURCE: FEMS Microbiology Letters (2002), 212(1), 121-126  
CODEN: FMLED7; ISSN: 0378-1097  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal

LANGUAGE: English  
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 22 OF 137 CIN COPYRIGHT 2005 ACS on STN  
TI Patents  
SO Ind. Bioprocess. Alert, 12 Jul 2002 (20020712), p. 8-9. CODEN: IBANBZ.  
AB WO 02/052021 patent application was granted to South Korean inventors for  
thermostable L-arabinose isomerase and process for preparing D-tagatose  
thereby. Newly discovered gene from Thermotoga neapolitana 5068 expresses  
a thermostable arabinose isomerase that can produce tagatose suitable for  
food and pharmaceutical industry use at high yield and temperature.

L7 ANSWER 23 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 18  
TI Method of site-specific insertion in Zymomonas mobilis genomic DNA and its  
use to improve ethanol fermentation  
SO PCT Int. Appl., 27 pp.  
CODEN: PIXXD2  
AB The present invention provides a method of site-specific insertion in  
Zymomonas, comprising, providing a Zymomonas gene fragment, interrupting a  
DNA sequence the fragment, and transforming the Zymomonas through  
homologous recombination with the interrupted fragment. Specifically, the  
invention provides constructs and plasmids for insertion of genes for  
fermentation of arabinose and xylose to ethanol and simultaneous inactivation  
of  
lactate dehydrogenase by gene disruption, to improve the conversion of  
cellulose to ethanol. Exogenous genes encoding xylose isomerase,  
xylulokinase, L-arabinose isomerase, L-ribulokinase, L-ribulose-5-  
phosphate 4-epimerase, transaldolase, transketolase, and a promoter  
comprise the transgenes that can be inserted in Zymomonas mobilis  
chromosomal DNA. The invention is demonstrated by transformation of Z.  
mobilis with plasmids pZB101 or pZB121 (nonreplicative) which contain a  
cassette (ldh::Tc) of gene ldh (lactate dehydrogenase) with a gene Tcr  
(tetracycline resistant) insert. Southern blot hybridization showed that  
the Tcr marker was integrated in the ldh gene in the chromosome and HPLC  
anal. showed that the integrants did not produce D-lactic acid in ethanol  
ferms. Another example of the invention is integration of the  
Pgap-araBAD operon into the gene ldh site in the Z. mobilis chromosome by  
transformation of Z. mobilis with plasmid pZB1862-ldhL-ara which contains  
an ldhL-araBAD-ldhL cassette. LdhL contains gene ldh and flanking  
sequences. The Z. mobilis araBAD integrants were able to use either  
xylose or arabinose as a sole carbon source.

ACCESSION NUMBER: 2001:816941 CAPLUS  
DOCUMENT NUMBER: 135:353767  
TITLE: Method of site-specific insertion in Zymomonas mobilis  
genomic DNA and its use to improve ethanol  
fermentation  
INVENTOR(S): Zhang, Min; Chou, Yat-Chen  
PATENT ASSIGNEE(S): Midwest Research Institute, USA  
SOURCE: PCT Int. Appl., 27 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001083784	A2	20011108	WO 2001-US11239	20010406
WO 2001083784	A3	20031002		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,			

SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,  
 ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG,  
 KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,  
 IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN,  
 GW, ML, MR, NE, SN, TD, TG  
 CA 2304927 AA 20011102 CA 2000-2304927 20000502  
 AU 2001051397 A5 20011112 AU 2001-51397 20010406  
 JP 2003531620 T2 20031028 JP 2001-580391 20010406  
 EP 1366178 A2 20031203 EP 2001-924773 20010406  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 BR 2001010676 A 20031230 BR 2001-10676 20010406  
 PRIORITY APPLN. INFO.: US 2000-562613 A 20000501  
 CA 2000-2304927 A 20000502  
 WO 2001-US11239 W 20010406

L7 ANSWER 24 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 19  
 TI Development of an immobilization method of L-arabinose isomerase for  
 industrial production of tagatose  
 SO Biotechnology Letters (2001), 23(22), 1859-1862  
 CODEN: BILED3; ISSN: 0141-5492  
 AB Of the immobilization methods tested, alginate beads treated with  
 glutaraldehyde gave the most stable and economic method for immobilizing  
 L-arabinose isomerase for the industrial production of tagatose. L-Arabinose  
 isomerase immobilized in a packed-bed reactor produced an average of 30 g  
 tagatose l-1 day-1 from 100 g galactose L-1 for 8 days.

ACCESSION NUMBER: 2001:925357 CAPLUS  
 DOCUMENT NUMBER: 136:182502  
 TITLE: Development of an immobilization method of L-arabinose  
 isomerase for industrial production of tagatose  
 AUTHOR(S): Oh, Deok-Kun; Kim, Hye-Jung; Ryu, Se-Ah; Rho, Hoe-Jin;  
 Kim, Pil  
 CORPORATE SOURCE: Department of Bioscience and Biotechnology, Sejong  
 University, Seoul, 143-747, S. Korea  
 SOURCE: Biotechnology Letters (2001), 23(22), 1859-1862  
 CODEN: BILED3; ISSN: 0141-5492  
 PUBLISHER: Kluwer Academic Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 136:182502  
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 25 OF 137 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on  
 STN  
 TI Isolation and characterization of a gene encoding a protein disulfide  
 isomerase from Bombyx mori Bm5 cell line.  
 SO Korean Journal of Genetics, (September, 2001) Vol. 23, No. 3, pp. 295-305.  
 print.  
 CODEN: KJGEDG. ISSN: 0254-5934.  
 AB Many secreted proteins have disulfide bonds that are important for their  
 structure and function. Protein disulfide isomerase (PDI, EC 5.3.1.4.),  
 an enzyme that catalyzes the formation and rearrangement of  
 thiol/disulfide exchange reactions, is a resident of the endoplasmic  
 reticulum (ER). The subcellular localization and its function as catalyst  
 of disulfide bond formation in the biosynthesis of secretory and cell  
 membrane proteins suggest that PDI plays a key role in the secretory  
 pathway. To obtain genes related to molecular chaperone and the ER  
 foldase from the Bombyx mori Bm5 cell line, the cDNA library was  
 constructed with mRNA isolated from Bm5 cell line treated with by  
 tunicamycin (5 mug/ml). We have isolated a cDNA encoding protein  
 disulfide isomerase (bPDI), which consists of an open reading frame of 484  
 amino acids (55.6 kDa). It shows PDI-typical two active thioredoxin sites

of CGHC and on ER retention signal of KDEL motif at its C-terminal. The bPDI protein shared less than 55% of the amino acid sequence homology with other reported PDIs. bPDI is most genetically similar to the D. melanogaster PDI.

ACCESSION NUMBER: 2001:526200 BIOSIS  
DOCUMENT NUMBER: PREV200100526200  
TITLE: Isolation and characterization of a gene encoding a protein disulfide isomerase from Bombyx mori Bm5 cell line.  
AUTHOR(S): Goo, Tae Won; Yun, Eun Young; Hwang, Jae Sam; Kang, Seok Woo; Park, Soo Jung; You, Kwan Hee; Kwon, O-Yu [Reprint author]  
CORPORATE SOURCE: Department of Anatomy, College of Medicine, Chungnam National University, Taejon, 301-131, South Korea  
oykwon@hanbat.chungnam.ac.kr  
SOURCE: Korean Journal of Genetics, (September, 2001) Vol. 23, No. 3, pp. 295-305. print.  
CODEN: KJGEDG. ISSN: 0254-5934.  
DOCUMENT TYPE: Article  
LANGUAGE: Korean  
ENTRY DATE: Entered STN: 14 Nov 2001  
Last Updated on STN: 23 Feb 2002

L7 ANSWER 26 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 20  
TI High Production of D-Tagatose, a Potential Sugar Substitute, Using Immobilized L-Arabinose Isomerase  
SO Biotechnology Progress (2001), 17(1), 208-210  
CODEN: BIPRET; ISSN: 8756-7938  
AB An L-arabinose isomerase of Escherichia coli was immobilized using covalent binding to agarose to produce D-tagatose, a bulking sweetener that can be economically used as a sugar substitute. The immobilized L-arabinose isomerase stably produced an average of 7.5 g-tagatose/L·day for 7 days with a productivity exceeding that of the free enzyme (0.47 vs 0.30 mg/U·day). Using a scaled-up immobilized enzyme system, 99.9 g-tagatose/L was produced from galactose with 20% equilibrium in 48 h. The process was repeated two more times with production of 104.1 and 103.5 g-tagatose/L. D-Tagatose production using an immobilized L-arabinose isomerase has a high potential for com. application.

ACCESSION NUMBER: 2001:28258 CAPLUS  
DOCUMENT NUMBER: 134:221488  
TITLE: High Production of D-Tagatose, a Potential Sugar Substitute, Using Immobilized L-Arabinose Isomerase  
AUTHOR(S): Kim, Pil; Yoon, Sang-Hyun; Roh, Hoe-Jin; Choi, Jin-Hwan  
CORPORATE SOURCE: R&D Center, Tong Yang Confectionery Co., Seoul, 140-715, S. Korea  
SOURCE: Biotechnology Progress (2001), 17(1), 208-210  
CODEN: BIPRET; ISSN: 8756-7938  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 27 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 21  
TI Expression of E. coli araBAD operon encoding enzymes for metabolizing L-arabinose in Saccharomyces cerevisiae  
SO Enzyme and Microbial Technology (2001), 28(1), 16-24  
CODEN: EMTED2; ISSN: 0141-0229  
AB The Escherichia coli araBAD operon consists of three genes encoding three enzymes that convert L-arabinose to D-xylulose-5 phosphate. In this paper we report that the genes of the E. coli araBAD operon have been expressed in Saccharomyces cerevisiae using strong promoters from genes encoding S. cerevisiae glycolytic enzymes (pyruvate kinase, phosphoglucose isomerase,

and phosphoglycerol kinase). The expression of these cloned genes in yeast was demonstrated by the presence of the active enzymes encoded by these cloned genes and by the presence of the corresponding mRNAs in the new host. The level of expression of L-ribulokinase (araB) and L-ribulose-5-phosphate 4-epimerase (araD) in *S. cerevisiae* was relatively high, with greater than 70% of the activity of the enzymes in wild type *E. coli*. On the other hand, the expression of L-arabinose isomerase (araA) reached only 10% of the activity of the same enzyme in wild type *E. coli*. Nevertheless, *S. cerevisiae*, bearing the cloned L-arabinose isomerase gene, converted L-arabinose to detectable levels of L-ribulose during fermentation. However, *S. cerevisiae* bearing all three genes (araA, araB, and araD) was not able to produce detectable amount of ethanol from L-arabinose. We speculate that factors such as pH, temperature, and competitive inhibition could reduce the activity of these enzymes to a lower level during fermentation compared to their activity measured in vitro. Thus, the ethanol produced from L-arabinose by recombinant yeast containing the expressed BAD genes is most likely totally consumed by the cell to maintain viability.

ACCESSION NUMBER: 2000:875305 CAPLUS  
DOCUMENT NUMBER: 135:163120  
TITLE: Expression of *E. coli* araBAD operon encoding enzymes for metabolizing L-arabinose in *Saccharomyces cerevisiae*  
AUTHOR(S): Sedlak, M.; Ho, N. W. Y.  
CORPORATE SOURCE: Laboratory of Renewable Resources Engineering, Purdue University, West Lafayette, IN, USA  
SOURCE: Enzyme and Microbial Technology (2001), 28(1), 16-24  
CODEN: EMTED2; ISSN: 0141-0229  
PUBLISHER: Elsevier Science Ireland Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 28 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 22  
TI Tagatose production with araA-expressing recombinant *Escherichia coli* or with immobilized L-arabinose isomerase  
SO PCT Int. Appl., 23 pp.  
CODEN: PIXXD2  
AB This invention relates to a recombinant *Escherichia coli* and a process for producing D-tagatose. In detail, it includes the construction of recombinant *E. coli* harboring L-arabinose isomerase, whole-cell conversion of D-galactose into D-tagatose by recombinant *E. coli* expressing L-arabinose isomerase, enzymic production of D-tagatose by the extract of recombinant *E. coli* expressing L-arabinose isomerase, and bioconversion by immobilized L-arabinose isomerase. Thus, recombinant *E. coli* expressing the *E. coli* araA gene produced D-tagatose from D-galactose in 9.0-11.0% yields. Using an alginate-immobilized enzyme extract of this recombinant *E. coli* 11-14 g/L of D-tagatose was produced from 10% D-galactose after 24 h.

ACCESSION NUMBER: 2000:814637 CAPLUS  
DOCUMENT NUMBER: 133:349228  
TITLE: Tagatose production with araA-expressing recombinant *Escherichia coli* or with immobilized L-arabinose isomerase  
INVENTOR(S): Kim, Pil; Roh, Hoe-jin; Yoon, Sang-hyun; Choi, Jin-hwan  
PATENT ASSIGNEE(S): Tongyang Confectionery Co., S. Korea  
SOURCE: PCT Int. Appl., 23 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:77539 CAPLUS

DN 138:90013

ED Entered STN: 31 Jan 2003

TI Process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions

IN Bertelsen, Hans; Eriknauer, Kristian; Bottcher, Karen; Christensen, Hans  
Jorgen Singel; Stougaard, Peter; Hansen, Ole Cai; Jorgensen, Flemming

PA Den.

SO U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S. Ser. No. 905,108,  
abandoned.

CODEN: USXXCO

DT Patent

LA English

IC ICM A61K031-70

ICS C12P019-02; C07H001-00

NCL 514023000; 435105000; 536001110

CC 33-2 (Carbohydrates)

Section cross-reference(s): 7, 9

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003022844	A1	20030130	US 2002-194295	20020715
	US 2003129710	A1	20030710	US 2002-193896	20020715
PRAI	DK 2001-1114	A	20010716		
	US 2001-305155P	P	20010716		
	US 2001-905108	B2	20010716		
	US 2001-386209P	P	20010716		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003022844	ICM	A61K031-70
	ICS	C12P019-02; C07H001-00
	NCL	514023000; 435105000; 536001110
US 2003022844	ECLA	C12N009/24; C12N009/90; C12P019/02
US 2003129710	ECLA	C12N009/24; C12N009/90; C12P019/02

OS CASREACT 138:90013

AB Tagatose is manufactured by hydrolyzing lactose to galactose and glucose and isomerizing galactose to tagatose and chromatog. separation and recycling any unconverted compds. Thereby high yields of pure tagatose are obtained.

ST tagatose prepn lactose enzymic hydrolysis isomerization

IT Hydrolysis

(biol.; process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT Isomerization

(process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 9031-11-2, Lactase

RL: CAT (Catalyst use); USES (Uses)

(S. solfataricus; process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 9023-80-7, L-Arabinose **isomerase**

RL: CAT (Catalyst use); USES (Uses)

(Thermoanaerobacter mathranii; process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 50-99-7P, D-Glucose, preparation **17598-81-1P**, Tagatose

RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation)

(process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

IT 59-23-4P, D-Galactose, preparation

RL: BPN (Biosynthetic preparation); IMF (Industrial manufacture); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

(process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)  
IT 439253-48-2, Galactose **isomerase**  
RL: CAT (Catalyst use); USES (Uses)  
(process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)  
IT 63-42-3, Lactose  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions)

=> d

L3 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2003:77539 CAPLUS  
DN 138:90013  
TI Process for manufacturing of tagatose from lactose via enzymic hydrolysis and isomerization reactions  
IN Bertelsen, Hans; Eriknauer, Kristian; Bottcher, Karen; Christensen, Hans Jorgen Singel; Stougaard, Peter; Hansen, Ole Cai; Jorgensen, Flemming  
PA Den.  
SO U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S. Ser. No. 905,108, abandoned.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003022844	A1	20030130	US 2002-194295	20020715
	US 2003129710	A1	20030710	US 2002-193896	20020715
PRAI	DK 2001-1114	A	20010716		
	US 2001-305155P	P	20010716		
	US 2001-905108	B2	20010716		
	US 2001-386209P	P	20010716		
OS	CASREACT 138:90013				

=> d 2,3 L3

L3 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:126213 CAPLUS  
DN 136:182869  
TI Separation of tagatose from sugar syrup by ion exchange resins  
IN Umino, Takehiro; Watanabe, Sumihide; Yamamoto, Mikio  
PA Nihon Shokuhin Kako Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002051800	A2	20020219	JP 2000-240019	20000808
PRAI	JP 2000-240019		20000808		

L3 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:925357 CAPLUS  
DN 136:182502  
TI Development of an immobilization method of L-arabinose **isomerase** for industrial production of tagatose  
AU Oh, Deok-Kun; Kim, Hye-Jung; Ryu, Se-Ah; Rho, Hoe-Jin; Kim, Pil  
CS Department of Bioscience and Biotechnology, Sejong University, Seoul,

143-747, S. Korea  
SO Biotechnology Letters (2001), 23(22), 1859-1862  
CODEN: BILED3; ISSN: 0141-5492  
PB Kluwer Academic Publishers  
DT Journal  
LA English  
OS CASREACT 136:182502  
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ANSWER 11 OF 137 USPATFULL on STN

TI Methods for identifying therapeutic targets for treating infectious disease

AB This invention provides methods and systems to identify enzymes that act as enzyme catalyzed therapeutic activators and the enzymes identified by these methods. Also provided by this invention are compounds activated by the enzymes as well as compositions containing these compounds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:188386 USPATFULL

TITLE: Methods for identifying therapeutic targets for treating infectious disease

INVENTOR(S): Shepard, H. Michael, Encinitas, CA, UNITED STATES  
Lackey, David B., San Diego, CA, UNITED STATES  
Cathers, Brian E., San Diego, CA, UNITED STATES  
Sergeeva, Maria V., San Diego, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003130179	A1	20030710
APPLICATION INFO.:	US 2001-910345	A1	20010720 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-219598P	20000720 (60)
	US 2000-244953P	20001101 (60)
	US 2001-276728P	20010316 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: Antoinette F. Konski, McCutchen, Doyle, Brown & Enersen, LLP, 18th Floor, Three Embarcadero Center, San Francisco, CA, 94111

NUMBER OF CLAIMS: 81

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 342 Drawing Page(s)

LINE COUNT: 4432

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 12 OF 137 USPATFULL on STN

TI Novel thermostable isomerase and use hereof, in particular for producing tagatose

AB A novel L-arabinose isomerase active enzyme and its corresponding gene, derived from a thermophilic source are provided. The enzyme is suitable for the production of D-tagatose, a useful low-calorie sweetener. The enzyme may be obtained from a Thermoanaerobacter species such as Thermoanaerobacter mathranii.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:187920 USPATFULL

TITLE: Novel thermostable isomerase and use hereof, in particular for producing tagatose

INVENTOR(S): Hansen, Ole C., Vaerlose, DENMARK  
Jorgensen, Flemming, Lyngby, DENMARK  
Stougaard, Peter, Skibby, DENMARK  
Bertelsen, Hans, Videbaek, DENMARK  
Bottcher, Karen, Kibaek, DENMARK  
Christensen, Hans Jorgen Singel, Herning, DENMARK  
Eriknauer, Kristian, Odder, DENMARK

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003129710	A1	20030710
APPLICATION INFO.:	US 2002-193896	A1	20020715 (10)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 2001-386209, filed		

on 16 Jul 2001, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-305155P	20010716 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	Finnegan, Henderson, Farabow,, Garrett & Dunner, L.L.P., 1300 I Street, N.W., Washington, DC, 20005-3315	
NUMBER OF CLAIMS:	35	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	8 Drawing Page(s)	
LINE COUNT:	2155	
CAS INDEXING IS AVAILABLE FOR THIS PATENT.		

L7 ANSWER 13 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 9  
TI A modified *Saccharomyces cerevisiae* strain that consumes L-arabinose and produces ethanol  
SO Applied and Environmental Microbiology (2003), 69(7), 4144-4150  
CODEN: AEMIDF; ISSN: 0099-2240  
AB Metabolic engineering is a powerful method to improve, redirect, or generate new metabolic reactions or whole pathways in microorganisms. Here we describe the engineering of a *Saccharomyces cerevisiae* strain able to utilize the pentose sugar L-arabinose for growth and to ferment it to ethanol. Expanding the substrate fermentation range of *S. cerevisiae* to include pentoses is important for the utilization of this yeast in economically feasible biomass-to-ethanol fermentation processes. After overexpression of a bacterial L-arabinose utilization pathway consisting of *Bacillus subtilis* AraA and *Escherichia coli* AraB and AraD and simultaneous overexpression of the L-arabinose-transporting yeast galactose permease, we were able to select an L-arabinose-utilizing yeast strain by sequential transfer in L-arabinose media. Mol. anal. of this strain, including DNA microarrays, revealed that the crucial prerequisite for efficient utilization of L-arabinose is a lowered activity of L-ribulokinase. Moreover, high L-arabinose uptake rates and enhanced transaldolase activities favor utilization of L-arabinose. With a doubling time of about 7.9 h in a medium with L-arabinose as the sole carbon source, an ethanol production rate of 0.06 to 0.08 g of ethanol per g (dry weight) · h<sup>-1</sup> under oxygen-limiting conditions, and high ethanol yields, this yeast strain should be useful for efficient fermentation of hexoses and pentoses in cellulosic biomass hydrolyzates.

ACCESSION NUMBER: 2003:552388 CAPLUS  
DOCUMENT NUMBER: 139:244787  
TITLE: A modified *Saccharomyces cerevisiae* strain that consumes L-arabinose and produces ethanol  
AUTHOR(S): Becker, Jessica; Boles, Eckhard  
CORPORATE SOURCE: Institut fuer Mikrobiologie, Heinrich-Heine-Universitaet, Duesseldorf, D-40225, Germany  
SOURCE: Applied and Environmental Microbiology (2003), 69(7), 4144-4150  
CODEN: AEMIDF; ISSN: 0099-2240  
PUBLISHER: American Society for Microbiology  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 10  
TI Continuous D-Tagatose Production by Immobilized Thermostable L-Arabinose Isomerase in a Packed-Bed Bioreactor  
SO Biotechnology Progress (2003), 19(6), 1643-1647  
CODEN: BIPRET; ISSN: 8756-7938  
AB D-Tagatose was continuously produced using thermostable L-arabinose

isomerase immobilized in alginate with D-galactose solution in a packed-bed bioreactor. Bead size, L/D (length/diameter) of reactor, dilution rate, total loaded enzyme amount, and substrate concentration were found to be optimal at

0.8

mm, 520/7 mm, 0.375 h<sup>-1</sup>, 5.65 units, and 300 g/L, resp. Under these conditions, the bioreactor produced about 145 g/L tagatose with an average productivity of 54 g tagatose/L·h and an average conversion yield of 48% (weight/weight). Operational stability of the immobilized enzyme was demonstrated, with a tagatose production half-life of 24 days.

ACCESSION NUMBER: 2003:519828 CAPLUS  
DOCUMENT NUMBER: 139:349682  
TITLE: Continuous D-Tagatose Production by Immobilized  
Thermostable L-Arabinose Isomerase in a Packed-Bed  
Bioreactor  
AUTHOR(S): Ryu, Se-Ah; Kim, Chang Sup; Kim, Hye-Jung; Baek, Dae  
Heoun; Oh, Deok-Kun  
CORPORATE SOURCE: Department of Bioscience and Biotechnology, Sejong  
University, Seoul, 143-747, S. Korea  
SOURCE: Biotechnology Progress (2003), 19(6), 1643-1647  
CODEN: BIPRET; ISSN: 8756-7938  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 139:349682  
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 11  
TI Production of tagatose by a recombinant thermostable L-arabinose isomerase  
from Thermus sp. IM6501  
SO Biotechnology Letters (2003), 25(12), 963-967  
CODEN: BILED3; ISSN: 0141-5492  
AB A gene (thaI) corresponding to L-arabinose isomerase from Thermus strain  
IM6501 was cloned by PCR. It comprised 1488 nucleotides and encoded a  
polypeptide of 496 residues with a predicted mol. weight of 56019 Da. The  
deduced amino acid sequence had 96.8% identity with the L-arabinose  
isomerase of Geobacillus stearothermophilus. Recombinant ThaI with  
N-terminal hexa-histidine tags was over-expressed in Escherichia coli and  
purified by affinity chromatog. using Ni-NTA resin. The purified ThaI was  
thermostable with maximal activity at 60 °C at pH 8 for 30 min of  
reaction. Zn<sup>2+</sup> and Ni<sup>2+</sup> inactivated the catalytic activity of ThaI, 5 mM  
Mn<sup>2+</sup> enhanced the bioconversion yield by 90%. The bioconversion yield of  
54% from D-galactose to D-tagatose was obtained by recombinant ThaI at 60  
°C over 3 d.

ACCESSION NUMBER: 2003:432388 CAPLUS  
DOCUMENT NUMBER: 140:58480  
TITLE: Production of tagatose by a recombinant thermostable  
L-arabinose isomerase from Thermus sp. IM6501  
AUTHOR(S): Kim, Jung-Woo; Kim, Young-Wan; Roh, Hoe-Jin; Kim,  
Hae-Young; Cha, Jae-Ho; Park, Kwan-Hwa; Park,  
Cheon-Seok  
CORPORATE SOURCE: Department of Food Science and Technology, Kyunghee  
Univ., Youngin, 449-701, S. Korea  
SOURCE: Biotechnology Letters (2003), 25(12), 963-967  
CODEN: BILED3; ISSN: 0141-5492  
PUBLISHER: Kluwer Academic Publishers  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 16 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 12  
TI A feasible enzymatic process for D-tagatose production by an immobilized  
thermostable L-arabinose isomerase in a packed-bed bioreactor

SO Biotechnology Progress (2003), 19(2), 400-404

CODEN: BIPRET; ISSN: 8756-7938

AB To develop a feasible enzymic process for D-tagatose production, a thermostable L-arabinose isomerase, Gali152, was immobilized in alginate, and the galactose isomerization reaction conditions were optimized. The pH and temperature for the maximum galactose isomerization reaction were pH 8.0 and

65° in the immobilized enzyme system and pH 7.5 and 60° in the free enzyme system. The presence of Mn<sup>2+</sup> enhanced galactose isomerization to tagatose in both the free and immobilized enzyme systems. The immobilized enzyme was more stable than the free enzyme at the same pH and temperature. Under stable conditions of pH 8.0 and 60°, the immobilized enzyme produced 58 g/L of tagatose from 100 g/L galactose in 90 h by batch reaction, whereas the free enzyme produced 37 g/L tagatose due to its lower stability. A packed-bed bioreactor with immobilized Gali152 in alginate beads produced 50 g/L tagatose from 100 g/L galactose in 168 h, with a productivity of 13.3 (g of tagatose)/(L-reactor·h) in continuous mode. The bioreactor produced 230 g/L tagatose from 500 g/L galactose in continuous recycling mode, with a productivity of 9.6 g/L-h and a conversion yield of 46%.

ACCESSION NUMBER: 2002:982441 CAPLUS

DOCUMENT NUMBER: 138:203747

TITLE: A feasible enzymatic process for D-tagatose production by an immobilized thermostable L-arabinose isomerase in a packed-bed bioreactor

AUTHOR(S): Kim, Hye-Jung; Ryu, Se-Ah; Kim, Pil; Oh, Deok-Kun  
CORPORATE SOURCE: Department of Bioscience and Biotechnology, Sejong University, Seoul, 143-747, S. Korea

SOURCE: Biotechnology Progress (2003), 19(2), 400-404  
CODEN: BIPRET; ISSN: 8756-7938

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 138:203747

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 13

TI Properties of L-arabinose isomerase from Escherichia coli as biocatalyst for tagatose production

SO World Journal of Microbiology & Biotechnology (2003), 19(1), 47-51  
CODEN: WJMBEY; ISSN: 0959-3993

AB L-Arabinose isomerase (EC 5.3.1.4) (I) mediates the isomerization of D-galactose into D-tagatose as well as the conversion of L-arabinose into L-ribulose. To investigate the properties of I as a biocatalyst for the conversion of galactose to tagatose, the enzyme from E. coli was characterized. The substrate specificity of I for L-arabinose was 166-fold higher than that for D-galactose. The optimal pH and temperature for the galactose isomerization reaction were 8.0 and 30°, resp. I was stable for 1 h at temps. of <35° and within a pH range of 8-10. The Km for galactose was 1480 mM, which was 25-fold higher than that for arabinose. The addition of Fe<sup>2+</sup> and Mn<sup>2+</sup> enhanced the conversion of galactose to tagatose, whereas the addition of Cu<sup>2+</sup>, Zn<sup>2+</sup>, Hg<sup>2+</sup>, and Fe<sup>3+</sup> ions inhibited the reaction completely. In the presence of 1 mM Fe<sup>2+</sup>, the Km for galactose was found to be 300 mM.

ACCESSION NUMBER: 2003:156788 CAPLUS

DOCUMENT NUMBER: 138:397960

TITLE: Properties of L-arabinose isomerase from Escherichia coli as biocatalyst for tagatose production

AUTHOR(S): Yoon, Sang-Hyun; Kim, Pil; Oh, Deok-Kun  
CORPORATE SOURCE: R&D Center, Tongyang Confectionery Co., Seoul, 140-715, S. Korea

SOURCE: World Journal of Microbiology & Biotechnology (2003), 19(1), 47-51

CODEN: WJMBEY; ISSN: 0959-3993  
 PUBLISHER: Kluwer Academic Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:397960  
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 18 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 14  
 TI Cloning and characterization of thermostable L-arabinose isomerase from  
 Thermotoga neapolitana and its use for preparing D-tagatose  
 SO PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 AB The present invention relates to a novel gene coding for L-arabinose  
 isomerase derived from Thermotoga neapolitana 5068, a thermostable  
 arabinose isomerase expressed from the said gene, a recombinant expression  
 vector containing the said gene, a microorganism transformed with the said  
 expression vector, a process for preparing thermostable arabinose isomerase  
 from the said transformant and a process for preparing D-tagatose employing  
 the said enzyme. Since the recombinant arabinose isomerase of the  
 invention is highly thermostable and can produce tagatose with high yield  
 at high temperature, it can be efficiently applied in pharmaceutical and food  
 industries.

ACCESSION NUMBER: 2002:504941 CAPLUS  
 DOCUMENT NUMBER: 137:59513  
 TITLE: Cloning and characterization of thermostable  
 L-arabinose isomerase from Thermotoga neapolitana and  
 its use for preparing D-tagatose  
 INVENTOR(S): Pyun, Yu Ryang; Kim, Byoung Chan; Lee, Han Seung; Lee,  
 Dong Woo; Lee, Yoon Hee  
 PATENT ASSIGNEE(S): S. Korea  
 SOURCE: PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002052021	A1	20020704	WO 2001-KR2243	20011222
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2002051835	A	20020629	KR 2001-80711	20011218
US 2004058419	A1	20040325	US 2003-600689	20030620
PRIORITY APPLN. INFO.:				
			KR 2000-80711	A 20001218
			KR 2000-80608	A 20001222
			WO 2001-KR2243	A1 20011222
REFERENCE COUNT:	4	THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L7 ANSWER 19 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 15  
 TI Methods for identifying therapeutic targets for treating infectious  
 disease  
 SO PCT Int. Appl., 503 pp.  
 CODEN: PIXXD2  
 AB This invention provides methods and systems to identify enzymes that act

as enzyme-catalyzed therapeutic activators and the enzymes identified by these methods. Also provided by this invention are compds. activated by the enzymes as well as compns. containing these compds.

ACCESSION NUMBER: 2002:89878 CAPLUS  
DOCUMENT NUMBER: 136:156403  
TITLE: Methods for identifying therapeutic targets for treating infectious disease  
INVENTOR(S): Shepard, Michael H.; Lackey, David B.; Cathers, Brian E.; Sergeeva, Maria V.  
PATENT ASSIGNEE(S): Newbiotics, Inc., USA  
SOURCE: PCT Int. Appl., 503 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002007780	A2	20020131	WO 2001-US23095	20010720
WO 2002007780	A3	20030220		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003130179	A1	20030710	US 2001-910345	20010720
PRIORITY APPLN. INFO.:			US 2000-219598P	P 20000720
			US 2000-244953P	P 20001101
			US 2001-276728P	P 20010316

L7 ANSWER 20 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 16

TI Separation of tagatose from sugar syrup by ion exchange resins

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

AB Tagatose (I), useful as a low-calorie sweetener, is separated by fractionating I-containing sugar syrup by chromatog. using ion exchange resins. Galactose solution was treated with Ca(OH)<sub>2</sub> for 5 h and the reaction mixture was centrifuged. The supernatant was filtered through 0.45-μm membrane filter, desalted using Amberlite MB 3, and concentrated to give syrup containing

16.8% galactose and 83.2% I. The syrup was passed through a column packed with Ca-form Dowex XFS 43278 at 50° and the column was eluted with H<sub>2</sub>O to give a fraction containing 94.5% I.

ACCESSION NUMBER: 2002:126213 CAPLUS  
DOCUMENT NUMBER: 136:182869  
TITLE: Separation of tagatose from sugar syrup by ion exchange resins  
INVENTOR(S): Umino, Takehiro; Watanabe, Sumihide; Yamamoto, Mikio  
PATENT ASSIGNEE(S): Nihon Shokuhin Kako Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002051800	A2	20020219	JP 2000-240019	20000808

PRIORITY APPLN. INFO.:

JP 2000-240019

20000808

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WO 2000068397	A1	20001116	WO 1999-KR661	19991104
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
KR 2000073075	A	20001205	KR 1999-16118	19990506
EP 1095153	A1	20010502	EP 1999-954465	19991104
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 2003235894	A1	20031225	US 2003-440407	20030519
PRIORITY APPLN. INFO.:				
			KR 1999-16118	A 19990506
			WO 1999-KR661	W 19991104
			US 2001-743196	B1 20010108
REFERENCE COUNT:	7	THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L7 ANSWER 29 OF 137 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 23  
 TI Process for manufacturing D-tagatose  
 SO U.S., 15 pp., Cont.-in-part of U.S. Ser. No. 821,969, abandoned.  
 CODEN: USXXAM  
 AB D-Tagatose is manufactured from cheese whey and/or milk. The cheese whey and/or milk is hydrolyzed to prepare a mixture comprising galactose and glucose. Galactose is separated from the glucose by fermentation and subjected to isomerization using L-arabinose isomerase, thereby producing D-tagatose. The D-tagatose can be used as a reduced calorie food sweetening and bulking agent, as an intermediate for the synthesis of optically active compds., and as an additive in detergent, cosmetic and pharmaceutical formulations.

ACCESSION NUMBER: 2000:285626 CAPLUS  
 DOCUMENT NUMBER: 132:307346  
 TITLE: Process for manufacturing D-tagatose  
 INVENTOR(S): Ibrahim, Osama O.; Spradlin, Joseph E.  
 PATENT ASSIGNEE(S): Kraft Foods, Inc., USA  
 SOURCE: U.S., 15 pp., Cont.-in-part of U.S. Ser. No. 821,969, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6057135	A	20000502	US 1992-976241	19921113
CA 2086912	AA	19930717	CA 1993-2086912	19930107
PRIORITY APPLN. INFO.:			US 1992-821969	B2 19920116
REFERENCE COUNT:	17	THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L7 ANSWER 30 OF 137 USPATFULL on STN  
 TI Highly regulable promoter for heterologous gene expression  
 AB The invention relates to an operon encoding enzymes involved in the utilization of L-arabinose, to the promoter derived therefrom, and to expression systems utilizing the promoter. The promoter is particularly useful for expression of DNA sequences in prokaryotes because of their inducibility and repressibility of the promoter. The invention also relates to the enzymes of the operon, and antibodies thereto.



CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:24481 USPATFULL

TITLE: Highly regulable promoter for heterologous gene expression

INVENTOR(S): De Lencastre, Herminia, New York, NY, United States  
De Sa-Nogueira, Isabel, Oeiras, Portugal

PATENT ASSIGNEE(S): The Rockefeller University, New York, NY, United States  
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6030807		20000229
APPLICATION INFO.:	US 1997-926842		19970910 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1996-31077P	19960910 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Railey, II, Johnny F.	
LEGAL REPRESENTATIVE:	Klauber & Jackson	
NUMBER OF CLAIMS:	22	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	29 Drawing Figure(s); 28 Drawing Page(s)	
LINE COUNT:	3892	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.